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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,118	06/09/2005	Mototsugu Takamura	450100-04503	4810

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EXAMINER

ALPHONSE, FRITZ

ART UNIT	PAPER NUMBER
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2112

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12/23/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/510,118	Applicant(s) TAKAMURA, MOTOTSUGU	
	Examiner FRITZ ALPHONSE	Art Unit 2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-19, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 9 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the amendment filed on 9/09/2009. Claims 1-22 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8, 10-19, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sako (U.S. Pat. No. 5,732,088) in view of Higashida (U.S. Pat. No. 6,826,181) and further in view of Weldon (U.S. Pat. No. 5,140,596).

As to claim 1, Sako (fig. 1) shows an interleaving device comprising: a first interleaving means (3a) for performing folding interleaving on first data comprised of plural input packets, in units of a data word or plural consecutive data words (col. 6, lines 32-48); and a second interleaving means (3b) for performing interleaving (col. 8, lines 30-51), in units of the packet, on second data by said first interleaving means (col. 9, lines 15-45).

Sako does not explicitly disclose the second data comprised of plural packets. However, the limitations are obvious and well known in the art, as evidenced by Higashida (col. 4, lines 24 - 55).

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention to improve upon the packet transmitter, as disclosed by Higashida. Doing so would provide a packet transmission apparatus capable of improving the error correction

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efficiency and error correction capability with respect of the amount of parity added by executing error correction or error detection.

In addition, as to claim 1, Sako does not explicitly disclose a second interleaving means, directly receiving output from a first interleaving means. However, the limitations are obvious and very well known in the art, as evidenced by Weldon (fig. 3; col. 8, lines 20- 32; where Weldon discloses first interleaver 300 connected to second serial interleaver 320 from the outer serial encoder 310).

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention to improve upon the interleaving system, as disclosed by Weldon. Doing so would provide a practical way to increase the speed at which data can be recorded in a system employing a code in which parity characters are in intermediate symbol locations.

As to claims 2-3, Sako discloses an interleaving device, wherein said second interleaving means (interleaver 2b) replaces a value of beginning data in a first packet of packet-unit interleave (col. 7, lines 25-40); and wherein said beginning data is a sink byte in a header of a packet that constitutes said first data (fig. 12, col. 12, lines 7-19).

As to claims 4-5, Sako discloses an interleaving device, wherein said first interleaving means (3a) is installed by using first storage means incorporated in a programmable device; and wherein said second interleaving means (3b) is installed by using second storage means externally attached to said programmable device (col. 5, lines 10-20). Furthermore, Sako (fig. 10) discloses a dual-port random access memory (RAM 21) in which inconsecutive addresses are accessed in units of a data word at each clock synchronized with the data word.

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As to claims 6-8, Sako discloses an interleaving device, wherein said second storage means is a random access memory fitted to burst transfer of data in units of plural data words (fig. 4; col. 11, lines 39-45); and wherein said second storage means is a synchronous dynamic random access memory (col. 7, lines 57 through col. 8 line 9). Furthermore, Sako discloses an interleaving device wherein an error correction code is added to each of the packets that constitute said first data (col. 3, lines 31-41);

As to claims 10-11, Sako discloses an interleaving device, wherein said error correction code is a Reed-Solomon code; and wherein said first interleaving means performs folding interleaving on said first data in units of a byte or plural consecutive bytes (col. 5, lines 10-20).

As to claim 12, method claim 12 corresponds to apparatus claim 1; therefore, it is analyzed as previously discussed in claim 1 above.

As to claims 13-14, Sako interleaving method, wherein in said second interleaving step (note second interleaver 2b), a value of beginning data in a first packet of packet-unit interleave is replaced (col. 7, lines 25-40), and wherein said beginning data is a sink byte in a header of a packet that constitutes said first data (fig. 12, col. 12, lines 7-19).

As to claim 15-16, Sako discloses and interleaving method, wherein said first interleaving step (note first interleaver 2a) is performed by using first storage means which is incorporated in a programmable device; and wherein said second interleaving step (2b) is performed by using second storage means which is externally attached to the programmable device (col. 5, lines 10-20). Furthermore, Sako (fig. 10) discloses a dual-port random access memory (RAM 21) in which inconsecutive addresses are accessed in units of a data word at each clock synchronized with the data word is used.

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As to claims 17-19, method claims 17-18 correspond to apparatus claims 6-7; therefore, they are analyzed as previously discussed in claims 6-7 above.

As to claims 21-22, method claims 21-22 correspond to apparatus claims 10-11; therefore, they are analyzed as previously discussed in claims 10-11 above.

Allowable Subject Matter

4. Claims 9 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 9 and 20 contain allowable subject matter because none of the cited references either singular or in combination discloses “each of the packets that constitute the first data is obtained by adding said error correction code to plural transport packets, respectively, that constitute a transport stream obtained by performing compression and encoding on the basis of the MPEG-2 standard on predetermined data.”

Response to Arguments

5. Applicant's arguments filed on 9/09/2009 have been fully considered but they are not persuasive.

Applicant asserts that “*Sako* merely discloses in FIG. 1 interleavers 3a, 3b. However, the output from interleaver 3a in *Sako* is not directly input to interleaver 3b. Therefore, nothing in *Sako* shows, teaches or suggests a second interleaving means that directly receives output from a first interleaving means as claimed in claim 1, or a second interleaving step of performing interleaving on second data directly generated by a first interleaving step as

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claimed in claim 12. Rather, *Sako* teaches away from the claimed invention since the output from interleavers 3a, 3b are selectively output to C1 encoder 5”.

The examiner respectfully disagrees because *Sako* (Fig. 1) clearly shows a first interleaver 3a directly input to interleaver 3b.

Applicant asserts that “nothing in *Sako* shows, teaches or suggests a first interleaving means performing interleaving in units of a data word or plural consecutive data words, and second interleaving means performing interleaving in units of a packet as claimed in claims 1 and 12. Rather, *Sako* merely discloses using interleaver 3a when the optical disk is a standard record density and selecting interleaver 3b when the optical disk is a high density optical disk.”

The examiner respectfully disagrees because *Sako* (see abstract) clearly teach performing interleaving in units of a data word.

Applicant asserts that “*Higashida, et al.* merely discloses that the data output from the second interleaving means is output in a unit of data in a third direction. Thus, nothing in *Higashida, et al.* shows, teaches or suggests (a) a first interleaving in units of a data word or plural consecutive data words, and (b) second interleaving in units of a packet as claimed in claims 1 and 12. Rather, *Higashida, et al.* merely discloses after a first interleave process outputting data of a unit of a second direction and after a second interleave process outputting data of a unit of data in a third direction”.

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The examiner asserts that *Higashida has been used because* Sako does not explicitly disclose a second data comprised of plural packets. However, the limitations were obvious and well known in the art, as evidenced by Higashida (col. 4, lines 24 - 55).

6. Independent claims 1 and 12 are not allowable because the prior art clearly teach all the limitations of the claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz Alphonse, whose telephone number is (571) 272-3813. The examiner can normally be reached on M-F, 8:30-6:00, Alt. Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman, can be reached at (571) 272-3644.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-3824

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Fritz Alphonse/

Examiner, Art Unit 2112